

Conservation Connection

Geographical Information Systems (GIS) and You...

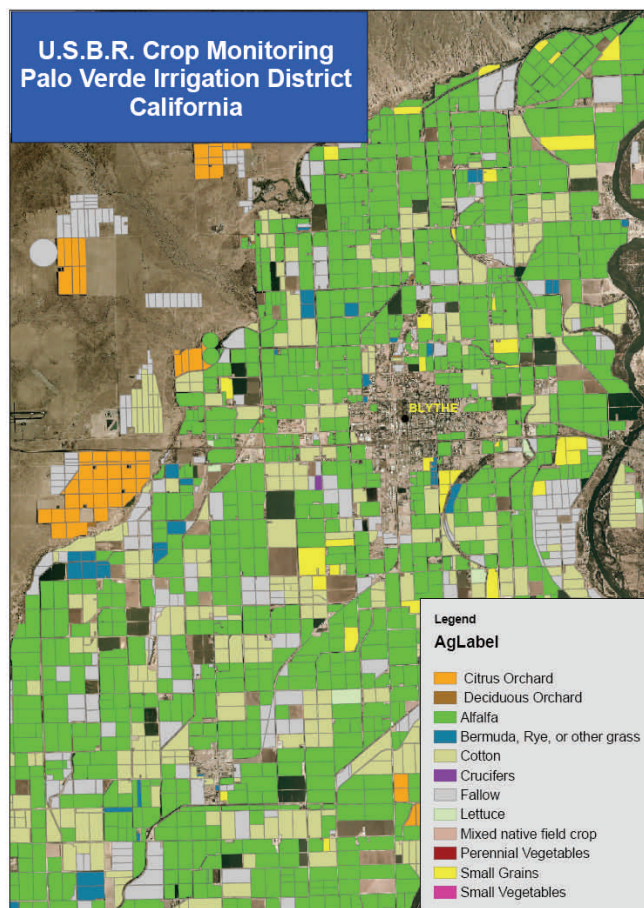
By Dennis Perkins

As management techniques move into the 21st Century, technology is answering the challenge. Fifteen years ago, GIS was limited to special computer boxes with very special programming. Mapping was slow and not available to many. The information was restricted to primarily mapping functions. Today, GIS is a fully integrated geographical data base, capable of not only selectable multi-layering, but also data management and reporting abilities. GIS is also capable of running on almost all newer model computers.

O.K. so it's nice to have pretty pictures, but what else is GIS good for? Consider it a management or reporting tool. Each spring you fill in your database query worksheet with the cropping data, acreage, anticipated water requirements, and operator information provided by the land owners and based on parcel numbers or field identifiers. This information is automatically inter-related into the mapping functions and capable of being totaled and queried. The results are detailed district maps that show fields with crops in their respective colors, reports that total the crops by acreage, water

requirements based on crop evapotranspiration rates, and possibly district maintenance items (such as pump hours) and other reportable items. Also, it's possible to input the regular turnout meter readings and maintain a water allocation balance for each land owner and to build-in conveyance and evaporation losses into the equation.

Challenges for most districts in implementing a full GIS program is most frequently the programming cost, staff training, and equipment. Full GIS programs, while not too



Picture Provided by Jeff Milliken, USBR

complicated for programmers, are quite daunting for the average computer users. The program takes time to learn and effort to maintain and update user skills. Additionally, many districts can't justify the cost of higher end equipment needed for the development and maintenance of GIS programs. The answer to this appears to be a library type service. A library service is where a University or private programming company creates a GIS center to assist individual users, be they districts, public utilities, or companies, to develop and maintain the GIS profile for them. By doing this, the cost of equipment, programming, and maintenance is spread over many contracts and the costs are more manageable. Information would be input through database reports and input forms. This could be at either the district level, or through the maintenance agreement.

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Lucille Billingsley Honored as her 10 year Trek in Water Conservation Comes to an End

By The Regional Office Water Conservation Team

The MP-Regional Office presented Lucille Billingsley a Star award to thank her for her extraordinary accomplishments and leadership during her tenure as Water Conservation Team Lead. At the end of July 2007, Lucille bid farewell to her fellow Water Conservation teammates to relocate to the Folsom Area Office as a Repayment Specialist.

In July 1997, Lucille entered the world of Water Conservation. During her ten years as a Water Conservation Specialist, she advanced to Team Lead. As Team Lead, Lucille worked diligently to develop and maintain a skilled and successful team.

Lucille has also maintained a high priority on public outreach and service, resulting in public participation and cooperation in the water conservation program.

Under Lucille's leadership, the Water Conservation Team administered hundreds of grants through the Water Conservation Field Services Program, the CALFED Water Use Efficiency Grant Program, and several other technical assistance programs. Multiple types of water conservation criteria were developed and revised, and many other program goals were also successfully met.

Loss of Lucille's special talents will be felt on many levels, and the Water Conservation Team will miss her exceptional leadership. We wish her luck in her new adventures!



American River Water Education Center at Folsom Dam (ARWEC)On the Move

By Shana Avalos Knott



Yes, it is true, we are "on the move". All five of the buildings that make up the American River Water Education Center (Center) have been relocated to a new site about ¼ mile away from the original site. As you may already know, a new bridge is being constructed downstream of Folsom Dam. When the bridge location was determined, ARWEC was located too close to the new-right-of-way. The committee decided to move the cluster of buildings to a location that could still serve the public, schools, and provide Folsom Dam tours.

The new location will be more accessible to the public located off Auburn-Folsom Road and the American River bicycle trail. The new landscape design will provide homeowners ideas on how to landscape a beautiful yard that has low water consumption. In addition there will be a demonstration garden that will have examples of drip irrigation, controllers, and other ideas for better water conservation at home. Also in the garden, there will be a power path and water walk that illustrates power production and water conservation.

ARWEC staff will continue to conduct tours of the Center and Dam as this has grown to a very popular venue for the greater Sacramento Area teachers. It provides grade appropriate curriculum in water conservation and watersheds for students.

Plans for moving back into the buildings are dependent on the contractors' schedule. We are planning to move in September of this year and hope to be operating in October. We look forward to our new site and look forward to providing our water conservation messages and tools to a larger audience. Look for our reopening this Fall. You can follow our progress by visiting us at www.usbr.gov/mp/arwec.



ITRC's Rapid Appraisal Process Provides Valuable Insight into District Irrigation Performance



By ITRC Staff

The Irrigation Training and Research Center (ITRC) at California Polytechnic State University, San Luis Obispo, promotes an innovative approach for performing Rapid Appraisal Process (RAP) evaluations at water districts across the western U.S. The RAP is a knowledge-based toolkit that allows trained professionals to quickly diagnose district-level performance without cumbersome software modeling or weeks of data analysis. A RAP is usually completed in two weeks, and the result is a strategic roadmap for both short-term and long-term improvements related to hardware and management practices. Specific ideas are methodically laid out in a concise technical report, presented to each district after the visit. The RAP provides a blueprint for actions that will result in better water control, service to turnouts, and water conservation.

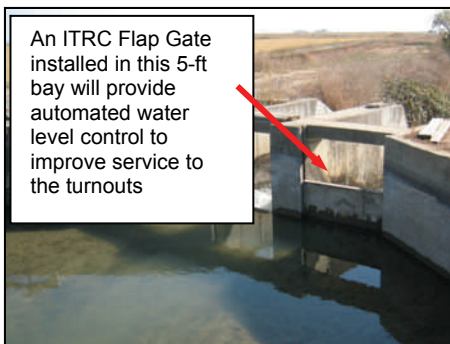
The RAP visits consist of ITRC engineers spending several days at a water district visiting water distribution infrastructure and facilities, as well as interviewing key staff about operations. The entire length of the main canal is examined, along with representative lateral canals or pipelines, pumping plants, regulation reservoirs, etc. Other issues investigated during the RAP may include communications, flow measurement devices, drainage recirculation, energy usage, changing cropping patterns, urbanization, SCADA, and water quality trends. The goal is to formulate a prioritized plan of action after gaining an understanding of how and why the water is being manipulated, what types of constraints the district has, what hardware is being used, and what opportunities for improved operations or water conservation might exist.

The RAP provides a fresh look at local and regional water issues through a systematic, independent assessment. Water districts are often aware that their operations have a potential to improve, but they may lack the sufficient knowledge or expertise with modern water control and measurement technologies to reach that potential. ITRC's recommendations are

targeted to pragmatic, cost-effective projects that represent state-of-art design in irrigation science and engineering.

Entities which have benefited from the RAP reports include water districts, wildlife refuges, and agencies throughout the western United States, especially those in the Sacramento and San Joaquin Valleys. Many water districts have been able to use the recommendations in the RAP reports to generate successful water conservation proposals for the Water Use Efficiency program and other cost-sharing grants.

Example recommendation from an RAP report provided to Glenn-Colusa Irrigation District (GCID).



An ITRC Flap Gate installed in this 5-ft bay will provide automated water level control to improve service to the turnouts

Proposed ITRC Flap Gate site.



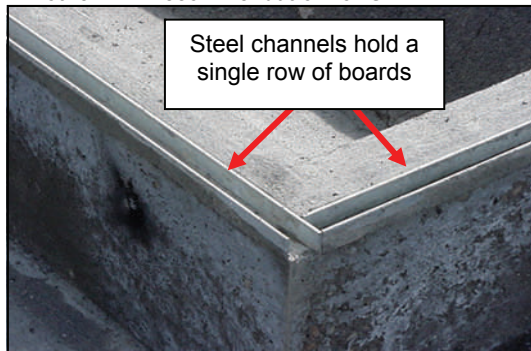
Example ITRC Flap Gate (Imperial Irrigation District).
View from upstream.

ITRC's active technical assistance has provided special expertise on water management and conservation for agricultural water users for over 20 years. ITRC has helped hundreds of diverse water agencies to solve complex agricultural and environmental water problems by transforming water policy objectives into implementable engineering solutions. Areas of emphasis include modernization of irrigation districts, SCADA & canal

automation, energy management for peak load reduction, flow measurement, and optimizing farm irrigation methods, among others. ITRC also holds its popular educational short courses for water professionals throughout the year.

For more information, please contact Dr. Charles Burt at cburt@calpoly.edu.

Another RAP recommendation for GCID.



A steel channel placed in the top of the concrete walls of a long-crested weir holds a single row of flashboards for adjusting the final crest elevation.



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Water Conservation Ideas and Trivia

By Bryce White

Ideas so old that they're new... it always surprises me when I discover another one of these "old" ideas. Obviously I still don't know everything.

Here are three of my favorite new, but "old" ideas:

1. Wash the car on the lawn. This lends to more than one benefit. The water from washing the car can reduce the amount of water needed to water the lawn, and the lawn also acts as a natural filter, removing soap and wax from the run off. The run off enters our storm drains and in most cases, storm drains go directly into a near by creek. Even tap water without soap and wax can affect creeks and its aquatic life. Chlorine is added to our tap water to kill the little bugs that might harm us; however, the chlorine can also kill other sensitive life. If there is soap and wax in the water, the affects are even worse.

2. Direct rain gutters to the pool. This idea also has multiple benefits. It helps avoid the need to empty and refill the pool and makes pool chemical management easier. Some water supplies have minerals in the water which are commonly referred to as hard water. Hard water can leave a ring around the pool, and over time, the minerals in the water become more

concentrated unless the pool is drained and refilled every year. Controlling chlorine and pH levels become increasingly difficult as the hardness increases. Rain water has almost no minerals; therefore, if the rain water is directed into the pool during the winter and the pool is allowed to over flow, the pure rain water will mix with the mineral concentrated pool water and reduce the overall hardness concentration.

3. Don't waste food. Food is really "concentrated water". It takes a lot of water to produce food. When you count the water needed to produce food (crops and meat), it adds up. Here's just a bit of trivia I found on the internet.

It takes over 2,500 gallons of water to produce a pound of beef.

It takes over 600 gallons of water to produce a pound of chicken.

It takes over 500 gallons of water to produce a pound of bread.

It takes over 200 gallons of water to produce a glass of milk.

It takes over 100 gallons of water to produce one egg.

It takes over 30,000 gallons of water to produce the typical American Thanksgiving dinner for six people.

Food.....it's water too. So not wasting food is, in a sense, water conservation. 💧

Thanks for the Memories...

By Lucille Billingsley



It's been real... it's been fun... and for the most part, it's been real fun. But like all good things, this too must come to and end. Mary Ann Dickenson, Executive Director of the California Urban Water Conservation Council (Council), has recently announced her departure from the organization.

Mary Ann has a wealth of environmental and water conservation knowledge. Experiences include working at the Connecticut Department of Environmental Protection, the South Central Connecticut Regional Water Authority, and Metropolitan Water District. In 1999, Mary Ann became the Executive Director of the Council.

Thanks to Mary Ann's dedication and spirit, the

Council and Reclamation have forged a strong partnership. This partnership lead to an unprecedented multi-partner agreement between the Council and Reclamation (Mid-Pacific & Lower Colorado Regions), DWR, and CALFED. The purpose of the agreement was to provide assistance to urban water suppliers to implement the first phase of the CALFED Bay-Delta Program incentive-driven Water Use Efficiency Program. In addition, the Council has a separate agreement with Reclamation that created 'guest signatory' accounts for Reclamation's non-council member urban contractors. This agreement allows these contractors to use the Council's annual update internet site for reporting their Best Management Practices activities to Reclamation.

Reclamation has valued Mary Ann's professionalism, support, and enthusiasm and will truly miss her not only as a partner, but as a friend. We wish her all the best in her new job with the Alliance for Water Efficiency.

Good Luck Mary Ann!



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The MP Region Highlights Two Members of the Water Conservation Team



The Mid-Pacific Region welcomes Kevin Clancy as the newest addition to the Water Conservation Team. Kevin is part of the Federal Career Internship Program and will spend the next two years learning about the different facets of water resource management and conservation.

Kevin recently graduated from Colorado State University with a BS degree in Watershed Science. While at CSU, Kevin assisted in studies regarding fish migration in urban stream systems and invasive plant species along the Green and Yampa rivers in Dinosaur National Monument. He also worked during the summers with the Forest Service conducting stream condition inventories and habitat assessments. Prior to returning to college, Kevin did accounting and financial work for a resort development company located in the Colorado Aspen Valley.

In his spare time, Kevin enjoys whitewater rafting, fly fishing, bicycling, and snowboarding.

Kevin can be reached at (916) 978-5223 or kclancy@mp.usbr.gov.



Shana Avalos Knott has been the American River Water Education Center (ARWEC) Manager since its inception in 1999, and she was intimately involved in ARWEC's development. In addition to her duties at ARWEC, Shana oversees the Water Management Plan's annual updates for the Central California Office.

Shana came to Reclamation from a career as an Ecologist and an Interpreter with California State Parks and has Federal experience in the Forest Service and National Park Service. Her love and appreciation of natural resources developed as a child during family camping trips and hikes. After graduation from Humboldt State University, she enjoyed a variety of jobs including wilderness ranger, dirt bike patrol ranger, and history tour leader. She also helped redesign the State Indian Museum.

Shana states that, *"Working with the dedicated people of Reclamation and understanding this important mission I am proud to help water conservation efforts and aid in promoting water education. Thousands of people come through ARWEC every year; they are getting (and understanding) the water conservation message."*

Shana can be reached at (916) 989-7150 or savalos@mp.usbr.gov.

GIS (Con't from page 1)

Security is always a concern for districts and agencies. It is possible to establish password security clearances for various levels of data access. For example, one level of security clearance may allow access to only the district boundary and parcel information. The next level of security access may allow boundary, parcel, crop, and field information, while the district or agency may have complete access to all land, water, and maintenance information.

Beware, GIS programming is not for the casual computer user. While it opens up a whole new world of visual and database information for management purposes, it does use up a lot of time learning the programming. That's why, in many cases, it is recommended to utilize a service that provides the end result with in-house mapping and data access. Want to see Arcview, a GIS program? Go to <http://www.esri.com/index.html> and check it out.



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Calendar of Events

Water Reuse, Conservation, and Desalination Conference

UIM Conference Series

Las Vegas, CA

August 21, 2007

<http://www.uimconferences.com>

Annual Conference on State-wide Water Resources

Urban Water Institute

San Diego, CA

August 22-24, 2007

<http://www.urbanwater.com>

Northern California Tour

Hosted by the Water Education Foundation

Sacramento, CA

September 12-14, 2007

<http://watereducation.org/tours.asp#watertours>

4th International Conference on Irrigation and Drainage

U.S. Committee on Irrigation and Drainage

Sacramento, CA

October 3-6, 2007

<http://www.icid2007.org/07prog.PDF>

WaterSmart Innovations Conference and Expo

Southern Nevada Water Authority

Las Vegas, NV

October 8-10, 2007

<http://www.watersmartinnovations.com>

Landscape Water Management

ITRC, CalPoly, San Luis Obispo, CA

December 3-5, 2007

<http://www.itrc.org>

2007 International Irrigation Show

Irrigation Association

San Diego, CA

December 9-11, 2007

<http://www.irrigation.org>



Drought Workshops 2007

2007 Drought Workshops:

From Plan to Action

California's water year 2006-07 ended on a particularly dry note and there is the possibility of another dry year or potential supply interruptions next year. Thus, the California Department of Water Resources, California Urban Water Conservation Council, and U.S. Bureau of Reclamation are sponsoring workshops to assist urban water suppliers to review and update their Water Shortage Contingency Plans and prepare to implement them, if necessary. At each workshop, guest speakers will share local experiences, challenges, and solutions in coping with water shortages in their region.

These workshops are designed to provide step-by-step guidance and information on the following:

- Establish a water shortage response team
- Forecast next year's supply and demand
- Assess water shortage mitigation options
- Establish triggering levels
- Develop staged demand reduction program
- Adopt the water shortage contingency plan
- Administer and implement the plan
- Sources of information and assistance

DWR's draft revised ***Urban Drought Guidebook*** will be presented at the workshops for comments and suggestions.

There is no charge to attend the workshop although reservations are required so that we can arrange lunch.

Please register by August 31, 2007.

Suggested attendees:

General managers, elected officials, and conservation staff.

(Bring a copy of your agency's most current Water Shortage Contingency Plan, if available.)

Workshop space is limited, REGISTER NOW!

To register, please fill out this form and fax to: (916) 552-5877 or send an email to: heather@cuwcc.org by August 31, 2007.

Workshop Date and Location:

Name, Title: _____

Organization: _____

Address: _____

City, State, Zip _____

Phone: _____

Email: _____

Workshop Times

All workshops will begin at 9:30 a.m. and end at 3:00 p.m.

Workshops Dates and Hosts

September 11
City of Davis

September 13
Sonoma County Water Agency

September 18
El Dorado Irrigation District

September 20
City of Fresno

September 25
Contra Costa Water District

September 27
Santa Clara Valley Water District

October 2
City of San Luis Obispo

October 4
Metropolitan Water District of
Southern California

October 9
Municipal Water District of Orange
County
with the City of Santa Ana

October 11
San Diego County Water Authority

October 16
Coachella Valley Water District

*Please go to the CUWCC website at
www.cuwcc.org/
or the DWR website at
www.owue.water.ca.gov/
for more information and
directions to the workshops*

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Address Correction Requested

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